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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,644	12/13/2005	Hans Negle	DE030218US1	7143

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BRIARCLIFF MANOR, NY 10510

EXAMINER	
THOMAS, JAISON P	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
11/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,644	NEGLE, HANS	
	Examiner	Art Unit	
	Jaison P. Thomas	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,13-16 and 18-27* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,6-8,13,14,16 and 18-27* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/25/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to amendments filed on 6/25/2009.

2. Claims 1-10,13-16 and 18-27 are pending. Claims 9 and 10 are withdrawn. Claims 11,12 and 17 are cancelled. Claims 21-27 are new.

3. The rejections of claims 7 and 8 under 35 USC 112, 2nd paragraph are withdrawn in view of Applicants' remarks.

4. The rejections of Claims 1,13,14,16,17,19 and 20 under 35 USC 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as being obvious over Moore et al. (US Patent 4219791) are withdrawn in view of Applicants' amendments.

5. The rejection of Claims 2-4,7, and 8 under 35 USC 103(a) as being unpatentable over Moore in view of Allen et al. (US Patent 6541534) are withdrawn in view of Applicants' amendments.

6. The rejection of Claim 5 under 35 USC 103(a) as being unpatentable over Moore et al. in view of Frantz et al. (US Patent 3670091) are withdrawn in view of Applicants' amendments.

7. The rejections of Claims 1-4,6,16 and 18-20 under 35 USC 102(b) as being anticipated by Viebranz et al. (US Patent 5756936) are withdrawn in view of Applicants' amendments.

8. The rejections of Claims 5,7 and 8 under 35 USC 103(a) as being unpatentable over Viebranz in view of Frantz et al. or Allen et al. are withdrawn in view of Applicants amendments.

9. The rejections of Claims 1 and 13-20 under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Negle (EP 1176856) are withdrawn in view of Applicants' amendments.

10. The rejections of Claims 1,16,18 and 19 under 35 USC 102(b) as being anticipated by Olsson et al. (US Patent 4109098) are withdrawn in view of Applicants' remarks.

Election/Restrictions

11. Applicant's election with traverse of 6/25/2009 in the reply filed on 6/25/2009 is acknowledged. The traversal is on the ground(s) that incorrect form paragraphs were used with respect to the election of species and there is no burden on the Examiner to search both the liquid and solid form insulation materials. This is not found persuasive because the Examiner believes that proper form paragraphs were used with respect to instant PCT 371 national stage application. In any regard, there is a distinct burden on the Examiner as the insulation materials are BOTH physically and chemically distinct in nature i.e. a liquid based composition such as oils with dispersed organic compounds versus solid materials such as polymers containing solid fillers e.g. coated microspheres. There is no overlap with respect to these searches and the S3 to S10 search

lists alluded to by Applicants were conducted as brief survey of the relevant art and is by no means considered a comprehensive search. Search of insulation of solid materials would require considering Classes 252, 524 and 428 whereas liquid insulation materials could be found Class 174.

The requirement is still deemed proper and is therefore made FINAL.

Response to Arguments

12. Applicant's arguments with respect to claims above have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 2 and 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 2, the Examiner is unclear as to which property or combination of properties (e.g. shape, size, material, coating, filling, distribution and fraction)are being optimized with respect to tailoring specific resistance. Applicants are advised to delete said language as the concept is already understood in view of the antecedent claim language and Specification.

With respect to Claim 19, the Examiner is unclear as to the meaning of the phrase "cause of voltage drop of said voltage drops" in line 4 or "causing the remaining below" in line 10 and requests Applicants to amend claim language in order to clarify the meaning of the functional language. In the opinion of the Examiner, Applicants are advised to cancel the claim as the functional language of the claim is already adequately captured by Claim 1 "preventing voltage flashover" language and such a detailed explanation of the functioning of the insulation material is unnecessary and/or redundant in view of the antecedent claim language and Specification.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 1-6,14,16,18,20-22,25,26 are rejected under 35 U.S.C. 103(a) as obvious over Kehr et al. (US Patent 4412029).

Kehr et al. teaches an elastomeric composition providing electrical stress control comprised of a dielectric base material, polarizable component and a component having metal conductivity (Abstract). Examples of materials added to the dielectric base include carbon black and finely divided microspheres having a diameter of 2 microns and are conductive (Col. 9, Claims 2,6-8). The microspheres are defined has having a vacuum metal deposited coating on a plastic or glass spheroid

(Col. 5, line 41). Volume resistivity of the sample is preferably 10^8 ohm-cm (Col. 5, line 5) but the figures suggest samples with even higher values (see Figure 6, where volume conductivity is inversely related to resistivity). The reference suggests such material can be used in a high voltage cable application (Col. 4, line 29).

The Examiner notes the "foam material" limitation of Claim 16 and notes the definition of said term in the Specification as being a "polymer matrix" (pg. 4, line 21 of the Specification). The Examiner construes this term broadly as reading upon the resin base materials disclosed in above reference.

Kehr is relied upon as disclosed above. However, Kehr does not teach the specific resistance ranges required by Claim 1 or the selection of the microsphere material in Claim 5.

Any minor modifications which are necessary to meet the claim limitations, such as tuning the material to meet the specific resistivity ranges as required by Claim 1 (see Figure referred above) or the interchangability of microsphere material as required by Claim 5 (see Allen et al., US Patent 6541534, Col. 8, lines 9-15), are within the purview of the skilled artisan.

18. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehr et al. in view of Forster (US Patent 3709835).

Kehr is relied upon as disclosed above. However, Kehr does not teach the use of adhesion promoters as required by Claims 7 and 8.

Forster is relied upon as disclosed below.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the adhesion promoters of Forster on the particles of Kehr to improve the adhesion of the filler to the matrix polymer especially considering both references are drawn to the manufacture of high voltage insulation.

19. Claims 13,19,23,24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehr et al. (US Patent 4412029) in view of Backa et al. (WO 96/08020).

Kehr et al. is relied upon as disclosed above. However, Kehr et al. does not teach the use of the insulation material in a high voltage generator.

Backa et al. notes that electrical devices such as high-voltage cables, transformers and generators utilize electrical

insulation situated around electrical conductors in such devices which are polymeric in nature (pg. 1, lines 13-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polymeric insulation material of Kehr et al. in a high voltage generator as Backa et al. notes that polymeric materials can be used in both high voltage cables as well as generators for the same basic utility i.e. electrical insulation.

20. Claims 1-4,14,16,18,20,21 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chamberlain et al. (US Patent 5232775).

Chamberlain et al. teaches semi-conducting polymeric composites which is comprised of insulative polymeric resin and particulate filler coated with a semi-conducting material wherein the composition has volume resistivities ranging from 10^4 to 10^{14} ohm-cm. Examples of filler include Scotchlite S60 series glass bubbles which have diameters ranging from 15-65 microns (see attached 3M Product Literature printout). Insulative polymer resins are disclosed Col. 4, lines 10-24 and include ethylene propylene copolymer.

The Examiner notes the "foam material" limitation of Claim 16 and notes the definition of said term in the Specification as being a "polymer matrix" (pg. 4, line 21 of the Specification). The Examiner construes this term broadly as reading upon the resin base materials disclosed in above reference.

In the alternative, any minor modifications which are necessary to meet the claim limitations, such as tuning the material to meet the specific resistivity ranges as required by Claim 1, are within the purview of the skilled artisan.

21. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chamberlain et al. in view of Forster (US Patent 3709835).

Chamberlain is relied upon as disclosed above. However, Chamberlain does not recite the use of adhesion promoters as required by Claims 7 and 8.

Forster is relied upon as disclosed below.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the adhesion promoters of Forster on the particles of Chamberlain to improve the adhesion of the filler to the matrix polymer especially considering both references are drawn to the manufacture of

electrical insulation and both references utilize similar polymer matrices (e.g. ethylene propylene copolymer).

22. Claims 1,14,16,18,20,22 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Forster (US Patent 3709835).

Forster teaches semiconductive materials which are suitable for high voltage insulation (Abstract) and specifically in use for splicing high voltage cables together (Col. 2, lines 12-15). The composition is semi-conducting being defined as having a resistivity of 10^{1} to 10^{10} ohm-cm. The composition is comprised of polymeric matrices disclosed including ethylene-propylene terpolymer (Col. 2, lines 48-55) and further contains fillers such as electrically conductive metal particles (Col. 3, lines 28-46). Forster also teaches said particles can be coated with coupling agents to better enhance the metal filler adhesion to the polymer matrix and coupling agents can be added in bulk or coated on the filler (Col. 3, lines 59-69).

The Examiner notes the "foam material" limitation of Claim 16 and notes the definition of said term in the Specification as being a "polymer matrix" (pg. 4, line 21 of the Specification). The Examiner construes this term broadly as reading upon the resin base materials disclosed in above reference.

In the alternative, any minor modifications which are necessary to meet the claim limitations, such as tuning the material to meet the specific resistivity ranges as required by Claim 1, are within the purview of the skilled artisan.

23. Claims 13,19,23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster in view of Backa et al. (WO 96/08020).

Forster is relied upon as disclosed above. However, Forster does not teach the use of the insulation material in a high voltage generator.

Backa et al. is relied upon as disclosed above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polymeric insulation material of Forster in a high voltage generator as Backa et al. notes that polymeric materials can be used in both high voltage cables as well as generators for the same basic utility i.e. electrical insulation.

Allowable Subject Matter

24. Claims 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent

form including all of the limitations of the base claim and any intervening claims.

The closest art known to the Examiner is listed on the attached forms. None of the art teaches an x-ray device of Claim 15 comprised of a generator insulated by a material that has the specific resistivity required wherein a second material is added to increase the electrical conductivity of the insulation as defined in Claim 1.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./
Examiner, Art Unit 1796

/Mark Kopec/
Primary Examiner, Art Unit 1796